

tween the Knives at the concurrence of their edges. And therefore the distance of the edges of the Knives at the meeting of these dark lines was the 160th part of an Inch. For as four Inches to the eighth part of an Inch, so is any length of the edges of the Knives measured from the point of their concurrence to the distance of the edges of the Knives at the end of that length, and so is the fifth part of an Inch to the 160th part. So then the dark lines above-mentioned meet in the middle of the Light which passes between the Knives where they are distant the 160th part of an Inch, and the one half of that Light passes by the edge of one Knife at a distance not greater than the 320th part of an Inch, and falling upon the Paper makes the fringes of the shadow of that Knife, and the other half passes by the edge of the other Knife, at a distance not greater than the 320th part of an Inch, and falling upon the Paper makes the fringes of the shadow of the other Knife. But if the Paper be held at a distance from the Knives greater than the third part of an Inch, the dark lines above-mentioned meet at a greater distance than the fifth part of an Inch from the end of the Light which passed between the Knives at the concurrence of their edges; and therefore the Light which falls upon the Paper where those dark lines meet passes between the Knives where their edges are distant above the 160th part of an Inch.

For at another time when the two Knives were distant eight Feet and five Inches from the little Hole in the Window, made with a small Pin as above, the Light which fell upon the Paper where the aforesaid dark lines met. passed between the Knives, where the distance

stance between their edges was as in the following Table, when the distance of the Paper from the Knives was also as follows.

<i>Distances of the Paper from the Knives in Inches.</i>	<i>Distances between the edges of the Knives in millimal parts of an Inch.</i>
1½.	0'012.
3½.	0'020.
8½.	0'034.
32.	0'057.
96.	0'081.
131.	0'087.

And hence I gather that the Light which makes the fringes upon the Paper is not the same Light at all distances of the Paper from the Knives, but when the Paper is held near the Knives, the fringes are made by Light which passes by the edges of the Knives at a less distance, and is more bent than when the Paper is held at a greater distance from the Knives.

O B S. X.

When the fringes of the shadows of the Knives fell perpendicularly upon a Paper at a great distance from the Knives, they were in the form of Hyperbolas, and their dimensions were as follows. Let CA, CB represent lines drawn upon the Paper parallel to the edges of the Knives, and between which all the Light would fall, if it passed between the edges of the Knives without inflexion; DE a right line drawn through C making the